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COMPUTATION OF TIME, AND CHANGES OF STYLE IN THE CALENDAR.

ADDRESSED TO STUDENTS OF HISTORY AND GENEALOGY.

BY SPENCER BONSALL.

(Concluded from Vol. II. page 394.)

In the preparation of this article it was necessary to consult a number of works of reference for the purpose of comparing the statements of the best authorities on the subject. Information of great importance, to the student of history, in fixing and verifying dates, was found scattered in the volumes consulted, and, for convenience of reference, the notes taken are now given in a more condensed form.

The "New Style," or Gregorian calendar, was adopted generally, in Roman Catholic countries, immediately after its promulgation, A. D. 1582. Most Protestant countries, however, continued for a longer or shorter period to use the "Old Style," or Julian calendar. It is necessary, therefore, in dealing critically with dates after 1582, to ascertain what "Style" was in use, at the time and place in question. The following table, compiled principally from "L'Art de vérifier les Dates," by M. de Saint-Allais, Paris, 1818, "The Chronology of History," by Sir Harris Nicolas, K.C.M.G., London, 1852, and "Handy-Book of Rules and Tables for Verifying Dates with the Christian Era," etc., by John J. Bond, Assistant Keeper of the Public Records, London, 1869, will serve to show when the chief States of Europe adopted the "New Style." As Mr. Bond had peculiar facilities for procuring correct information regarding the changes in many of the countries, and as his book is the latest authority to which I have had access, I have, when any doubt existed, preferred his dates to those of others.

	Old Style ended on—	New Style began next day—
In Spain,[1] Portugal, and the greater part of Italy, the same day as at Rome and Milan.	Thu. 4 Oct. 1582.	Fri. 15 Oct. 1582.
In France[2] and Lorraine.[3]	Sun. 9 Dec. 1582.	Mon. 20 Dec. 1582.
In Germany[4] and Switzerland[5] (by Roman Catholics).	Fri. 21 Dec. 1582.	Sat. 1 Jan. 1583.
In Savoy.[6]		
In the Roman Catholic Netherlands,[7] *viz.*, Brabant, Limbourg, Luxembourg, Gelderland (in part) — *Duchies.* Flanders, Artois, Hainault, Namur — *Counties.* Antwerp (*called the Marquisate of the Holy Empire*). Malines—*Lordship.*		
In the Protestant Netherlands,[8] Holland and Zealand, *viz.*, Rotterdam, Amsterdam, Leyden, Delft, Haerlem, and the Hague.		
In Prussia[9] (date of introduction not fixed).	....	.... 1583.
In Poland.[10]	Tue. 21 Dec. 1585.	Wed. 1 Jan. 1586.
In Hungary[11] (date of introduction not fixed).	....	.... 1587.
In Strasbourg.[12]	Sat. 18 Feb. 1682.	Sun. 1 Mar. 1682.
In Denmark,[13] and Protestant States of Germany.[14]	Sun. 18 Feb. 1700.	Mon. 1 Mar. 1700.
In Overyssel[15] or Overijsel (date not fixed).	....	.... 1700.
In Gelderland[16] or Guelderland.	Wed. 19 June, 1700.	Thu. 1 July 1700.
In Utrecht.[17]	Tue. 19 Nov. 1700.	Wed. 1 Dec. 1700.
In Friesland[18] or Vriesland.	Fri. 20 Dec. 1700.	Sat. 1 Jan. 1701.
In Groningen,[19] and Protestant parts of Switzerland.[20]	Tue. 31 Dec. 1700.	Wed. 12 Jan. 1701.
In Tuscany[21] (date of introduction not fixed).	....	...... 1751.
In Great Britain,[22] Ireland, and the Colonies.	Wed. 2 ~~Dec.~~ Sept. 1752.	Thu. 14 Sept. 1752.
In Sweden.[23]	Sun. 28 Feb. 1753.	Mon. 12 Mar. 1753.

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[1] Spain, etc. Bull of Pope Gregory XIII., 24th Feb. 1582.

[2] France. Pursuant to edict of Henry III., dated 3d Nov. 1582.

[3] Lorraine. Orders of those who had the spiritual authority in the name of the Bishop, Charles de Lorraine, Nov. 24th, 1582. See *L'Art de vérifier les Dates.*

[4] Germany. [5] Switzerland. [6] Savoy. Authority not given. See *Bond's Handy-Book.*

[7] Roman Catholic Netherlands. Proclamation of the Court 22d December, 1582.

[8] Protestant Netherlands. By edict or *Plakaet* of 10 Dec. 1582 (entered in

YEARS, MONTHS, AND WEEKS.

YEAR (Mœso-Gothic, *jer;* Anglo-Saxon, *gear;* Dutch, *jarr;* Friesic, *jer;* German, *jahr;* Danish, *aar;* Swedish, *ar;* Ice-

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the *Great Plakaet boek*, I. 395, in the Record Office of the Hague), the introduction of the New Style was fixed for the 15th of December, 1582; but afterwards settled, by a resolution of the States of Holland, to begin on the 1st of January, 1583.

The other provinces only adopted the measure about the year 1700.

[9] Prussia. "State Papers.—Prussian, 1586."

[10] Poland. "State Papers, Cracow, 3 January, 1586, *Stylo novo.*"

[11] Hungary. The Diet of Presburg, held in the presence of the Archduke Ernest, 1587.

[12] Strasbourg. Through the exertions of M. de la Grange, intendant of Alsace, Feb. 5th, 1682. *L'Art de vérifier les Dates.*

[13] Denmark. "State Papers, Copenhagen, 2d May, 1702, S. N." (*Stylo novo.*)

[14] Protestant States of Germany. On the 15th Nov. 1699, the old Calendar was universally abandoned within the empire; and a new one, framed by a celebrated mathematician named Weigel, was adopted, which differed only from the Gregorian as to the mode of fixing Easter and the Movable Feasts, so that it sometimes happened that the Protestants and Catholics celebrated that feast on a different day.

[15] Overyssel (date of introduction not fixed). By resolution, dated 4 April, 1700.

[16] Gelderland. In accordance with a resolution of the States, dated 26 May, 1700. (*Geld. Plakaet boek*, III. 27.)

[17] Utrecht. By the resolution dated 24 July, 1700. (*Utrecht Plakaet boek*, I. 457.)

[18] Friesland. By resolution dated 11 and 12 October, 1700.

[19] Groningen. In consequence of a resolution of the States General, of 6 February, 1700.

[20] Protestant parts of Switzerland refused the New Style until 1700, when Weigel's Calendar was received by those of the cantons of Zurich, Berne, Basle, and Schaffhausen, who commenced the year 1701 on the 12th Jan. N. S.

[21] Tuscany. By the Emperor of Germany, as grand-duke of Tuscany. (Gentleman's Magazine, vol. xxi. p. 93.)

[22] Great Britain, &c. Pursuant to Statute 24 Geo. II. c. 23, 1751.

[23] By edict of the King 24th Feb. 1752. *L'Art de vérifier les Dates.*

Bond states, that "The Gregorian, or New Style, was adopted gradually after 1696. The King of Sweden, fearing that striking off ten days at once, might prove prejudicial to commercial transactions, adopted the New Style gradually, by making no Leap-year after 1696 until 1744, by which plan 11 days were dropped. The eleven intermediate '*fourth years*' having thus only 365 days each, made the year 1744 the same as other countries where the New Style had been adopted." According to this arrangement, New Style would have commenced on Tuesday, 1 March, 1740.

landic, *ar;* Sanscrit, *jahran*, a course, or circle, to move in a circle).

Year, in the full extent of the word, is a system, or cycle of several months, usually twelve. Some writers define it as a period or space of time, measured by the revolution of some celestial body in its orbit. Thus the time in which the fixed stars make a revolution is called the great year; and the times in which Jupiter, Saturn, the Sun, Moon, etc. complete their courses, and return to the same point of the zodiac, are respectively called the years of Jupiter, and Saturn, and the Solar and Lunar years, etc.[1]

It is stated in Hutton's "Philosophical and Mathematical Dictionary," that a year, originally, denoted a revolution, and was not limited to that of the sun. Accordingly, we find by the oldest accounts, that people have, at different times, expressed other revolutions by it, particularly that of the moon; and consequently, that the years of some accounts are to be reckoned only months, and sometimes periods of two, or three, or four months. This will assist us greatly in understanding the traditions that certain nations give of their own antiquity, and perhaps also of the great age of men. We read expressly in several of the old Greek writers, that the Egyptian year, at one period, was only a month; and we are also told that at other periods it was three months, or four months; and it is probable that the children of Israel followed the Egyptian mode of computing their years. The Egyptians boasted, nearly two thousand years ago, that they had historical records of events, happening forty-eight thousand years before that period. This statement was evidently intended to deceive the Greeks, with the design of making them believe that they, the Egyptians, were the most ancient nation, an ambition which the Chinese attempt, at present, to imitate, striving to impress us with the idea that they are the oldest people on the earth. Both the present and the early imposters have pretended to ancient observations of the heavenly bodies, and recounted eclipses, in particular, to vouch for the truth of their statements. Since the time in which the solar year, or period of the earth's revolution round the sun, has been received, we may calculate with certainty; but, in regard to those remote ages, in which we do not precisely know what is meant by the term year, it is impossible to form any satisfactory conjecture of the duration of time, as computed by the ancients in their chronicles.

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[1] Ephraim Chambers's Cyclopædia, 1741.

The Babylonians pretend to an antiquity of the same fabulous kind; they boast of forty-seven thousand years in which they had kept observations; but we may judge of these as of the others. The Egyptians speak of the stars having four times altered their courses in that period which they claim for their history, and that the sun set twice in the east. They were not such perfect astronomers but that, after a round-about voyage, they might perhaps mistake the east for the west, when they came in again, particularly as the use of the mariner's compass was unknown to them.

The tropical or solar year, properly, and by way of eminence so-called, is the space of time in which the sun moves through the twelve signs of the zodiac. This, by observations of the best modern astronomers, contains 365 d. 5 h. 48 m. 46.14912 seconds. The quantity assumed by the authors of the Gregorian calendar was 365 d. 5 h. 49 m., which corresponds exactly with the observations of Bianchini, and de La Hire, in the next century. In the civil, or popular account, the year contains 365 days, with an additional day every four years.

The excess of the solar year over 365 days has been given by different astronomers as follows:—

Meton and Euctemon	5th	Century	B. C.	6 h.	18 m.	57	sec.
Hipparchus	2d	"	"	5 h.	55 m.	12	"
Sosigenes	1st	"	"	6 h.	0 m.	0	"
Albategnius	9th	"	A. D.	5 h.	46 m.	24	"
Alphonsine Tables	13th	"	"	5 h.	49 m.	16	"
Copernicus	16th	"	"	5 h.	49 m.	6	"
Tycho Brahe	"	"	"	5 h.	48 m.	45.5	"
Kepler	17th	"	"	5 h.	48 m.	57.65	"
Halley	"	"	"	5 h.	48 m.	54.691	"
Lalande	18th	"	"	5 h.	48 m.	35.5	"
Delambre	"	"	"	5 h.	48 m.	51.6	"
Laplace	"	"	"	5 h.	48 m.	49.7	"
Hind, 1850	19th	"	"	5 h.	41 m.	46.2	"

MONTH (Gothic, *menath;* Anglo-Saxon, *monath*, from *mona*, the moon; German, *monat;* Dutch, *maand;* Danish, *maaned;* Swedish, *manad*).

The next convenient division of time, which is marked out by the revolutions of the heavenly bodies, is the month. The *astronomical* month is the period of time in which the moon performs a complete revolution round the heavens, and is either *periodical* or *synodical.* The *periodical* month is the time in which the moon moves from one point of the heavens to the same point again, and is equal to 27 d. 7 h. 43 m. 47 seconds; and the *synodical* month, or *lunation*, as it is sometimes called, is that portion of time which elapses between two successive new moons, or between two successive conjunctions of the moon with the sun, and is equal to 29 d. 12 h. 44 m. 3.19 seconds. The *solar* month is that portion of time in which the sun moves through one entire sign of the zodiac, the mean quantity of which is 30 d. 10 h. 29 m. 3.84576 seconds, being the twelfth part of the solar year.

WEEK (Anglo-Saxon, *weoc;* Dutch, *week;* German *woche;* Danish, *uge;* Swedish, *vecka*).

The subdivision of the month into weeks is very ancient, and has been adopted by almost all nations, excepting the ancient Greeks, the inhabitants of the north of China, the Persians, and the Mexicans. It originated with the ancient Chaldeans, who gave the name of one of the seven planets to each hour of the day, and designated each day by the name of that planet which corresponded with the first hour of the day. In order to understand this, the order of the planets must be given upon the Ptolemaic system, that is, in the order of their distances from the earth, beginning with the most distant: Saturn, Jupiter, Mars, the Sun, Venus, Mercury, and the Moon. Commencing with Saturn, on the first hour of the first day, and allotting to each hour a planet, in the order named, the first hour of the second day, it is found, would fall to the Sun; of the third day, to the Moon; of the fourth, to Mars; of the fifth, to Mercury; of the sixth, to Jupiter; and of the seventh, to Venus.[1]

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[1] Edinburgh Encyclopædia.

The Latins adopted these designations in their names of the days of the week. They are to be found in old law books and MSS., and are still used by the learned professions throughout Europe.

Occasionally, the *signs only* of the planets were used, for the sake of brevity, particularly in diaries and journals. This is notably the case in the original MS. field-book of Mason and Dixon's survey of the boundary line between Pennsylvania and Maryland, 1763 to 1768, in possession of the Historical Society of Pennsylvania. In this book the name of each day of the week is represented by the sign, in addition to the usual dates, for a period of over four years. See, also, "Minutes of the Provincial Council of Pennsylvania" (Colonial Records), vol. ii. pages 90 to 96, etc. etc. In the latter part of vol i. (same Records) the Latin names of the days were used.

Our Saxon ancestors, before their conversion to Christianity, named the seven days of the week from the sun and moon, and some of their deified heroes, to whom they were peculiarly consecrated, and representing the ancient gods or planets; which names we have received, and still retain.

Latin.	Signs.	English.	Anglo-Saxon.	Presided over by
Dies Saturni	♄	Saturday	Sætern-dæg	Saturn
Dies Solis	☉	Sunday	Sunnan-dæg	The Sun
Dies Lunæ	☽	Monday	Monan-dæg	The Moon
Dies Martis	♂	Tuesday	Tiwes-dæg	Mars
Dies Mercurii	☿	Wednesday	Wodnes-dæg	Mercury
Dies Jovis	♃	Thursday	Thors-dæg	Jupiter
Dies Veneris	♀	Friday	Frigas-dæg	Venus

In some ancient documents we find the equivalent terms, *Dies Sabbati* for Saturday, and *Dies Dominica* for Sunday. Tiw, Tyw, Tuisto or Tuesco, the Saxon Mars, or God of war. Woden or Odin, a Scandinavian chief or deity, the reputed author of magic, and the inventor of all the arts, and was thought to answer to the Mercury of the Greeks and Romans. Thor was the god of thunder, as well as the ancient Jove. Friga, Freya, or Freja was the Scandinavian Venus; she was the wife of Thor, and goddess of peace, fertility, and riches.

This order of the days, first adopted by the Chaldeans, was preserved by the Mosaic law. The Christians, however, began their week on Sunday, and the Mahometans on Friday.

CALENDAR OF THE FRENCH REPUBLIC FROM 1792 TO 1806.

Although Encyclopædias and other works mention the French Republican Calendar, and in some cases attempt to give copies of it, I have yet to find, in the English language, a correct exemplar, or one that can be used for practical purposes. The Calendar here given may be relied on for perfect accuracy in every particular, as it has been prepared directly from the "Almanach National de France," and the "Gazette Nationale, ou Le Moniteur Universel."

The zeal for innovation which accompanied the French revolution, induced the rulers to change their calendar along with their government. It was decreed by the National Convention, in the autumn of 1793, that the vulgar era should be abolished in all civil concerns; that the new French era should be reckoned from the foundation of the republic, September 22, 1792, of the vulgar era, on the day of the true autumnal equinox; that each year should begin on the midnight of the day on which the autumnal equinox falls; and that the first year of the French republic had begun immediately after 12 o'clock P. M. of the 21st of September, 1792, and had terminated on the midnight between the 21st and 22d of September, 1793. In order to effect a correspondence between the seasons and the civil year, it was decreed that the fourth year of the republic should be the first sextile, or leap year, that a sixth complementary day should be added to it, and that it should terminate the first *Franciade;* that the sextile, or leap year, should take place every four years, and should mark the close of each Franciade; that the first, second, and third centesimal years, viz. 100, 200, and 300 of the republic, should be common, and that the fourth, viz. 400, should be sextile; and this should be the case every four centuries until the fortieth, which should terminate with a common year.

It was intended that the year should have been divided into ten parts, conformably to the decimal system: but, in taking the divisions of the months, the twelve revolutions of the moon round the earth made it absolutely necessary to admit twelve months. These were named after the seasons to which they belonged.

Autumn	Vendémiaire	Vintage month	September	22	to	October	21	30	days
	Brumaire	Foggy month	October	22	"	Nov.	20	30	"
	Frimaire	Frosty month	November	21	"	Dec.	20	30	"
Winter	Nivôse	Snowy month	December	21	"	Jan.	19	30	"
	Pluviôse	Rainy month	January	20	"	Feb.	18	30	"
	Ventôse	Windy month	February	19	"	March	20	30	"
Spring	Germinal	Germinating month	March	21	"	April	19	30	"
	Floréal	Flowery month	April	20	"	May	19	30	"
	Prairial	Meadow month	May	20	"	June	18	30	"
Summer	Messidor	Harvest month	June	19	"	July	18	30	"
	Thermidor	Hot month	July	19	"	August	17	30	"
	Fructidor	Fruit month	August	18	"	Sept.	16	30	"

As the French months consisted of 30 days each, making in all 360 days, the remaining five days required to complete the year were called *complementary days* and *sans-culottides.* They were named as follows:—

1. Primedi	Fête de la Vertu	The Virtues	Sept.	17th
2. Duodi	Fête du Génie	Genius	"	18th
3. Tridi	Fête du Travail	Labor	"	19th
4. Quartidi	Fête de l'Opinion	Opinion[1]	"	20th
5. Quintidi	Fête des Récompenses	Rewards	"	21st

The intercalary day of every fourth year was called *La sans-culottide*, and was to be the Festival of the Revolution, to be dedicated to a grand solemnity, in which the French should celebrate the period of their enfranchisement, and the institution of the Republic. The National oath, "To live free or die," was to be renewed.

Each day was divided according to the decimal system, into ten parts or hours, and these into ten others, and so on.

Each month was divided into three decades, each consisting of ten days; the names of which were taken from the Latin numerals. The first was called *Primedi*, 2d *Duodi*, 3d *Tridi*, 4th *Quartidi*, 5th *Quintidi*, 6th *Sextidi*, 7th *Septidi*, 8th *Octidi*, 9th *Nonidi*, and 10th *Décadi*. The last was the day of rest, and superseded the former Sunday.

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[1] "This festival, absolutely original, and perfectly adapted to the French character, was to be a sort of political carnival of twenty-four hours, during which people should be allowed to say or to write with impunity, whatever they pleased concerning every public man. It was for opinion to do justice upon opinion itself; and it behooved all magistrates to defend themselves by their virtues against the truths and the calumnies of that day."—Thiers' *History of the French Revolution.*

This decimal arrangement did not appear to give general satisfaction, the French Republicans rarely adopting the new names of the days, in dating their letters, or in conversation, but using the number of the day of each month of their calendar. Thus: the 6th, 17th, 28th, or 30th Nivôse, the 9th Fructidor, the 12th Germinal, the 16th Frimaire, the 23d Prairial, etc. The system was abandoned, and religious worship restored after *Septidi*,[1] 27th Germinal, year X. (17th April, 1802), and the next day, Sunday, commenced with the usual names of the days of the week: *Dimanche*, *Lundi*, *Mardi*, *Mercredi*, *Jeudi*, *Vendredi*, and *Samedi*.

This calendar existed until the 10th Nivôse, year XIV. (the 31st December, 1805). The next day, January 1, 1806, the Gregorian mode of computation was restored.

With the aid of the preceding and following tables, a complete calendar for any month, or year, of the French Republic can easily be constructed.

From	22	Sept.	1792	I
To	21	"	1793	
From	22	"	1793	II
To	21	"	1794	
From	22	"	1794	III*
To	22	"	1795	
From	23	"	1795	IV
To	21	"	1796	
From	22	"	1796	V
To	21	"	1797	
From	22	"	1797	VI
To	21	"	1798	
From	22	"	1798	VII*
To	22	"	1799	
From	23	"	1799	VIII
To	22	"	1800	
From	23	Sept.	1800	IX
To	22	"	1801	
From	23	"	1801	X
To	22	"	1802	
From	23	"	1802	XI*
To	23	"	1803	
From	24	"	1803	XII
To	22	"	1804	
From	23	"	1804	XIII
To	22	"	1805	
From	23	"	1805	XIV
To	31	Dec.	1805	

* Sextile or leap-years,

The calendar, although reckoned from the 22d of September, 1792, was not introduced until the 8th of Brumaire, year II. (29th of October, 1793). See *Le Moniteur* of that date.

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[1] See *Gazette Nationale ou Le Moniteur Universel*, 18, 20 Germinal, year X. (8, 10 April, 1802) for act of the Corps-Législatif, and speech of Lucien Bonaparte.

Years of the Republic. **I.** 1792-3 **II.** 1793-4 **III.** 1794-5	**V.** 1796-7 **VI.** 1797-8 **VII.** 1798-9	**IV.** 1795-6.* **VIII.** 1799-1800 **IX.** 1800-1 **X.** 1801-2	**XI.** 1802-3 **XIII.** 1804-5 **XIV.** 1805	**XII.** 1803-4.	
1 Vendémiaire	22 Sept.	1 Vendémiaire	23 Sept.	1 Vendémiaire	24 Sept.
9 “	30 “	8 “	30 “	7 “	30 “
10 “	1 Oct.	9 “	1 Oct.	8 “	1 Oct.
30 “	21 “	30 “	22 “	30 “	23 “
1 Brumaire	22 “	1 Brumaire	23 “	1 Brumaire	24 “
10 “	31 “	9 “	31 “	8 “	31 “
11 “	1 Nov.	10 “	1 Nov.	9 “	1 Nov.
30 “	20 “	30 “	21 “	30 “	22 “
1 Frimaire	21 “	1 Frimaire	22 “	1 Frimaire	23 “
10 “	30 “	9 “	30 “	8 “	30 “
11 “	1 Dec.	10 “	1 Dec.	9 “	1 Dec.
30 “	20 “	30 “	21 “	30 “	22 “
1 Nivôse	21 “	1 Nivôse	22 “	1 Nivôse	23 “
11 “	31 “	10 “	31 “	9 “	31 “
12 “	1 Jan.	11 “	1 Jan.	10 “	1 Jan.
30 “	19 “	30 “	20 “	30 “	21 “
1 Pluviôse	20 “	1 Pluviôse	21 “	1 Pluviôse	22 “
12 “	31 “	11 “	31 “	10 “	31 “
13 “	1 Feb.	12 “	1 Feb.	13 “	1 Feb.
30 “	18 “	30 “	19 “	30 “	20 “
1 Ventôse	19 “	1 Ventôse	20 “	1 Ventôse	21 “
10 “	28 “	9 “	28 “	9 “	29 “
11 “	1 March	10 “	1 March	10 “	1 March
30 “	20 “	30 “	21 “	30 “	21 “
1 Germinal	21 “	1 Germinal	22 “	1 Germinal	22 “
11 “	31 “	10 “	31 “	10 “	31 “
12 “	1 April	11 “	1 April	11 “	1 April
30 “	19 “	30 “	20 “	30 “	20 “
1 Floréal	20 “	1 Floréal	21 “	1 Floréal	21 “
11 “	30 “	10 “	30 “	10 “	30 “
12 “	1 May	11 “	1 May	11 “	1 May
30 “	19 “	30 “	20 “	30 “	20 “
1 Prairial	20 “	1 Prairial	21 “	1 Prairial	21 “
12 “	31 “	11 “	31 “	11 “	31 “
13 “	1 June	12 “	1 June	12 “	1 June
30 “	18 “	30 “	19 “	30 “	19 “
1 Messidor	19 “	1 Messidor	20 “	1 Messidor	20 “
12 “	30 “	11 “	30 “	11 “	30 “
13 “	1 July	12 “	1 July	12 “	1 July
30 “	18 “	30 “	19 “	30 “	19 “
1 Thermidor	19 “	1 Thermidor	20 “	1 Thermidor	20 “
13 “	31 “	12 “	31 “	12 “	31 “
14 “	1 Aug.	13 “	1 Aug.	13 “	1 Aug.
30 “	17 “	30 “	18 “	30 “	18 “
1 Fructidor	18 “	1 Fructidor	19 “	1 Fructidor	19 “
14 “	31 “	13 “	31 “	13 “	31 “
15 “	1 Sept.	14 “	1 Sept.	14 “	1 Sept.
30 “	16 “	30 “	17 “	30 “	17 “

Complementary days	1.	17 “	Complementary days	1.	18 “
	2.	18 “		2.	19 “
	3.	19 “		3.	20 “
	4.	20 “		4.	21 “
	5.	21 “		5.	22 “
	6.	22 “		6.	23 “

The 6th Complementary day was used only for the sextile years III., VII., and XI.

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* For the year **IV** of the Republic, after the 28th of February, use the first column under the year **I**, as 1796 was a Gregorian leap year. The 10th Ventôse was the 29th of February.

ROMAN NUMERALS.

In connection with this subject, it seems proper that some mention should be made of dates and numbers, such as are found in old books and MSS., and on ancient sculptures and monuments. The Roman numerals, with which we are all familiar, are I, V, X, L, C, D, and M. Some of the others are rather more difficult to understand.

When the Romans wrote several units, following each other, the first and last were longer than the rest, thus IIIII In ancient MSS. four is written IIII, and not IV; nine thus VIIII, and not IX, etc. Instead of V, five units IIIII were sometimes used in the eighth century. Half was expressed by an S at the end of the figures, CIIS was one hundred two and a half. This S sometimes appeared in the form of our 5. In some old MSS. the figures LXL are used to express ninety.

Q was sometimes used for 500, being the initial of Quingenti.

When Ↄ (a reversed C) is annexed to IↃ, it makes the value ten times greater, and in like manner, the annexing of Ↄ, and prefixing of C, increases its value tenfold. It has the power of the cipher 0 annexed to an Arabic numeral, and repeated.

Thousands were also expressed by a small line drawn over any numeral, thus $\overline{\mathrm{I}}$ signifies 1000; $\overline{\mathrm{VII}}$ 7000; $\overline{\mathrm{LX}}$ 60,000; likewise $\overline{\mathrm{M}}$ 1,000,000; $\overline{\mathrm{MM}}$ 2,000,000, etc.

The Roman numerals were generally used in England, France, Italy, Germany, and Spain, from the earliest times, to the middle of the 15th century.

"The College accounts in the English universities were generally kept in the Roman numerals till the early part of the sixteenth century; nor in the parish registers were the Arabic characters adopted before the year 1600. The oldest date we have met with, in Scotland, is that of 1490, which occurs in the rent-roll of the diocese of St. Andrew's; the change from Roman to Arabic numerals occurring, with a corresponding alteration in the form of writing, near the end of the volume."[1]

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[1] Encyclopædia Britannica.

"With respect to the dates of charters, the use of Roman ciphers was universal in all countries; but to avoid falling into error, it must be observed that in such dates, as well as those other muniments of France and Spain, the number for a thousand was sometimes omitted, the date beginning by hundreds; in others, the thousands were set down, and the hundreds left out; and in latter ages both thousands and hundreds were alike suppressed, and people began with the tens, as if —78 was put for 1778, a practice still followed in letters, and in affairs of trifling consequence.

"The numeral figures which have for some centuries prevailed in Europe are certainly Indian [East Indian]. The Arabians do not pretend to have been the inventors of them, but they ascribe their invention to the Indians, from whom they borrowed them. The numerals used by the Bramins, the Persians, the Arabians, and some other eastern nations are similar to each other, and the same characters were introduced into Europe, where they prevailed in the fifteenth century.

"The learned Dr. Wallis, of Oxford, delivers it as his opinion that the Indian or Arabic numerals were brought into Europe, together with other Arabic learning, about the middle of the tenth century, if not sooner."[1]

"The Saxon dates" on the table " are taken from the Danish and Norwegian registers, preserved in Suhm's Northern Collections.

"The oldest numerals are from a very curious Almanac, beautifully written on vellum, and belonging to the University of Edinburgh. It is calculated especially for the year 1492.

"Fac-similes from Caxton's *Mirrour of the World.* Shirwood's *Ludus Arithmomachiæ*, given in Dibdin's *Bibliotheca Spenceriana.*"[2]

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[1] Astle's Origin and Progress of Writing—London, 1794.

[2] Encyclopædia Britannica.

ROMAN AND ARABIC NUMERALS.

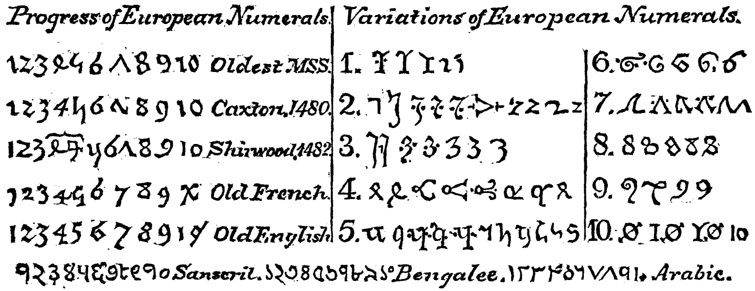
AS FORMERLY USED.

I	1	XX or Ẍ	20	C	100
IIII or IV	4	XXX or X⃛	30	CCCC or CD	400
IIIII or V	5	XXXX or XL	40	D or Iↄ or Q	500
IIIIII or VI	6	L	50	DC or Iↄc	600
IIX or VIII	8	LX	60	DCC or Iↄcc	700
IX or VIIII	9	LẌ or LXX	70	M or ⅿ or M̄ or CIↄ or	
X	10	XXC or LXXX	80	ↀ or ∞ or ><	1,000

∞ↁ or I̅I̅I̅I̅ or I̅V̅ or XLↄↄ or CΘↄ or CCCCↄ	4,000
V̅ or Qↄ or Iↄↄ or ↁ or ħ or ʌ or V̄ or IȤ	5,000
X̅ or ↂ or ʌ or ><ↄ or ↂ or CCIↄↄ	10,000
X̅V̅ or ↂħ or ʌʌ or CCIↄↄIↄↄ	15,000
X̅X̅ or ↂↂ or ψↂ or CCIↄↄCCIↄↄ	20,000
L̅ or Iↄↄↄ or Iↄↄↄ or Qↄↄ	50,000
C̅ or ↈ or CCCIↄↄↄ or CCCIↄↄↄ	100,000
D̅ or Iↄↄↄↄ or Qↄↄↄ	500,000
M̅ or CCCCIↄↄↄↄ	1,000,000

SAXON NUMERALS.

ı	v	x	l	c	d	m	Mcccxcviii	ıcccxxxiiii	Qx
1	5	10	50	100	500	1000	1398	1334	510


Progress of European Numerals.
Variations of European Numerals.
Oldest MSS.
Caxton, 1480.
Shirwood, 1482.
Old French.
Old English.
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.
Sanscrit.
Bengalee.
Arabic.

The above table is a compilation, from BOISSARD'S ROMAN ANTIQUITIES, the ENCYCLOPÆDIA BRITANNICA, and many other works, by Spencer Bonsall, ↀIↄCCCLẌIIX.